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ICC-ES Evaluation Report

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 54 00—Thermoplastic Membrane Roofing

REPORT HOLDER:

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EVALUATION SUBJECT:

FIBERTITE® ROOFING MEMBRANES: FIBERTITE®, FIBERTITE®-XT, AND FIBERTITE®-FB

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2006 *International Building Code®* (IBC)
- Other Codes (see Section 8)

Properties evaluated:

- Weather resistance
- Roof covering fire classification
- Wind uplift resistance
- Impact resistance

2.0 USES

FiberTite® roofing membranes are single-ply membranes used as roof covering in ballasted, adhered and mechanically fastened Class A or B membrane roof covering systems, on new or existing roofs.

3.0 DESCRIPTION

3.1 General:

The FiberTite® roof covering systems consist of FiberTite® single-ply membranes, insulation where used, barrier board or slip sheet where used, flashing, adhesives, and mechanical fasteners that are installed on combustible or noncombustible roof decks.

3.2 FiberTite® Roofing Membranes:

3.2.1 FiberTite®: FiberTite® membrane is a single-ply membrane consisting of an ethylene interpolymer / kethone ethylene ester (EIP / KEE) reinforced with a knitted polyester fabric. The membrane is nominally 36 mils [0.036 inch (0.91 mm)] thick and is available in conventional rolls 56 inches (1.4 m) wide and 100 feet (30.5 m) long. It is also available in 20-foot-by-64.5-foot (6 096 mm by 19 660 mm) prefabricated panel rolls with integral 3.5-inch-wide (89 mm) securing tabs located every 51 inches (1.3 m) on center running perpendicular to the length of the membrane.

3.2.2 FiberTite®-XT: FiberTite®-XT membrane is the same formulation as the FiberTite membrane, but is nominally 45 mils [0.045 inch (1.14 mm)] thick. It is available in the same widths and lengths as the FiberTite membrane.

3.2.3 FiberTite®-FB (Fleece Back): FiberTite®-FB (Fleece Back) membrane is the same formulation as the FiberTite® membranes, but has a 6-ounce-per-square-yard (200 g/m^2), polyester, nonwoven fabric fleece heat-bonded to the back side. The membrane is nominally 40 mils [0.040 inch (1.02 mm)] thick prior to the addition of the polyester fleece material, and is nominally 45 mils [0.045 inch (1.14 mm)] thick with the polyester fleece material. The membrane is available in rolls 54 inches (1.4 m) wide and 80 feet (24.4 m) long.

3.3 Insulation:

Foam plastic insulation, where used, must have a flame-spread index of not more than 75 when tested in accordance with ASTM E 84 at the maximum thickness intended for use. See Tables 1 through 7 for insulations for use with specific roof covering systems.

3.4 Barrier Board:

Barrier board, where used, must be one of the following:

- $^1/_4$-inch-thick (6.4 mm) “DensDeck,” manufactured by Geogia-Pacific Corporation
- $^5/_8$-inch-thick (15.9 mm) gypsum wallboard

3.5 Slip sheet:

Slip sheet, where used, may be either of the following:

- One-ply, “FR-50,” manufactured by Atlas Roofing
- Two plies, “FR-10,” manufactured by Atlas Roofing

3.6 Fasteners:

Fasteners, used to mechanically fasten insulation and membranes to the roof deck, must be corrosion-resistant and may be any of the FiberTite® insulation and membrane fasteners and plates summarized in this section or shown in Tables 6 and 7 of this report. Spacing of fasteners must be in accordance with Table 6.

3.6.1 FiberTite® Insulation Fastener: A No. 14 carbon steel screw used in combination with the FiberTite®

Insulation Stress Plate to attach insulation to steel, wood, or structural concrete deck. Fastener length must be sufficient to penetrate through the steel or into the wood deck a minimum of $^3/_4$ inch (19.1 mm) and into the concrete deck a minimum of 1 inch (25.4 mm).

3.6.2 FiberTite® Insulation Stress Plate: A 3-inch-diameter (76.2 mm), 0.032-inch-thick (0.82 mm) steel plate used in combination with the FiberTite® Insulation Fastener to attach insulation to roof deck.

3.6.3 FiberTite® Magnum Fastener: A No. 15 carbon steel screw used in combination with the FiberTite® Magnum Stress Plate to attach the membrane to steel, wood, or structural concrete deck. Fastener length must be sufficient to penetrate through the steel or into the wood deck a minimum of $^3/_4$ inch (19.1 mm) and into the concrete deck a minimum of 1 inch (25.4 mm).

3.6.4 FiberTite® Magnum Stress Plate: A 2.5-inch-by-1.5-inch (64 mm by 38 mm), No. 18 gage (0.048 inch), galvalume steel plate used in combination with the FiberTite® Magnum Fastener to attach the membrane to the roof deck.

3.7 Adhesives:

3.7.1 FTR 190: FTR 190 is a solvent-based contact adhesive for bonding FiberTite® and FiberTite®-XT membranes to a variety of compatible substrates. FTR 190 is applied to both the substrate and the underside of the membrane with a coverage of 50 square feet (4.65 m^2) per gallon (3.78 L). The adhesive has a shelf life of one year.

3.7.2 FTR 290: FTR 290 is a one-side application (substrate only) solvent-based adhesive for bonding FiberTite®-FB to a variety of compatible substrates. It has a coverage of 90 square feet (8.37 m^2) per gallon (3.78 L). The adhesive has a shelf life of six months.

3.7.3 FTR 390: FTR 390 is a water vehicle, rubberized asphalt adhesive designed for bonding FiberTite®-FB to a variety of compatible substrates. It is applied to the substrate with a coverage of 60 square feet (5.58 m^2) per gallon (3.78 L). The adhesive has a shelf life of six months.

3.7.4 Insta-Stik: Insta-Stik by Dow Chemical Company is a single-component polyurethane adhesive used to secure insulation boards to concrete, wood or metal decks. It has a coverage of 540 square feet (50.22 m^2) per unit. The adhesive is supplied in a 30-pound (13.62 kg) unit, consisting of a cylinder with a flexible dispensing hose and wand assembly.

3.8 Impact Resistance:

The FiberTite® Roofing Membranes described in this report meet requirements for impact resistance in accordance with Section 5.5 of FM 4470.

4.0 INSTALLATION

4.1 General:

Installation and application of the FiberTite® roofing membranes must comply with the IBC, the manufacturer's published installation instructions, and this report. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

The slope of the roof on which the FiberTite® membranes are installed must be a minimum of $^1/_4$:12 (2-percent slope) and must not be more than the maximum slope indicated for the particular assembly as listed in Tables 1 through 5.

Penetrations and terminations of the roof covering must be flashed and made weather-tight in accordance with the requirements of the membrane manufacturer and the IBC.

4.2 Fire Classification:

4.2.1 New Construction: Roof assemblies which include the FiberTite® roofing membranes described in, and installed in accordance with, this report are classified as Class A or B roof assemblies in accordance with ASTM E 108 or UL 790, as noted in Tables 1 through 3.

4.2.2 Reroofing: Prior to installation of new roof coverings, inspection in accordance with Section 1510 of the IBC, and approval from the code official, are required. See Tables 4 and 5 for fire classification of reroofing systems.

Class A, B or C roof coverings may be installed over existing classified roof assemblies under the following conditions without additional roof classification tests, provided the resulting classification is the lower of the new and existing roofing classification:

- New uninsulated roof coverings installed only over existing uninsulated assemblies.
- New insulated roof coverings installed over existing uninsulated assemblies only.

4.3 Wind Resistance:

4.3.1 New Construction: The maximum allowable wind uplift pressures for the FiberTite® Roofing Membranes as part of roof covering systems are noted in Tables 6 and 7. The ballasted system in Table 1 must be designed in accordance with IBC Section 1504.8 and ANSI/SPRI RP-4. Metal edge securement for low-slope membrane roof covering systems must be designed in accordance with ANSI/SPRI ES-1, complying with IBC Section 1504.5.

4.3.2 Reroofing: Roof coverings employing mechanical fasteners must be qualified, to the satisfaction of the code official, on the adequacy of fasteners penetrating through existing roof coverings into structural substrates. The uplift resistance of adhered systems in reroofing applications is outside the scope of this report.

5.0 CONDITIONS OF USE

The FiberTite®, FiberTite®-XT, and FiberTite®-FB roofing membranes described in this report comply with, or are suitable alternatives to what is specified in, the code indicated in Section 1.0 of this report, subject to the following conditions:

5.1 Installation and application of FiberTite® roofing membranes must comply with the IBC, the manufacturer's published installation instructions, and this report. The instructions within this report govern if there are any conflicts between the manufacturer's instructions and this report.

5.2 FiberTite® roofing systems must be installed by approved installers licensed by Seaman Corporation.

5.3 Foam plastic insulation, where used, must be separated from the interior of the building by an approved thermal barrier in accordance with IBC Section 2603.4.1.5, unless otherwise noted in an ICC-ES evaluation report on the foam plastic insulation for direct-to-steel-deck applications.

5.4 Foam plastic insulation, where used, must bear the label of an approved testing and listing agency indicating that the foam plastic has a flame-spread index of not more than 75 when tested in accordance with ASTM E 84 at the maximum thickness intended for use. Except for applications where a thermal barrier is not required, total thickness of foam plastic insulation must be limited to the least of the maximum

thicknesses allowed in Tables 1 through 7, or the maximum thickness that limits the flame-spread index to not more than 75 when testing is performed in accordance with ASTM E 84.

5.5 Design wind uplift pressure on any roof area, including edge and corner zones, must not exceed the allowable wind uplift pressure for the roof covering installed in that particular roof area. Refer to the allowable wind uplift pressure for systems in Tables 6 and 7.

5.6 The allowable wind uplift pressures listed in Tables 6 and 7 are for the roof covering only. The deck and framing to which the covering is attached must be designed for the applicable components and cladding wind loads in accordance with the IBC.

5.7 When application is over existing roofs, documentation of the wind uplift resistance of the composite roof construction must be submitted to the authority having jurisdiction.

5.8 The membranes are manufactured in Wooster, Ohio, and Bristol, Tennessee, under a quality control program with inspections by FM Approvals (AA-653).

6.0 EVIDENCE SUBMITTED

Data in accordance with ICC-ES Acceptance Criteria for Membrane Roof-covering Systems (AC75), dated April 2007.

7.0 IDENTIFICATION

Each roofing membrane bears a label noting the product name; the manufacturer's name (Seaman Corporation) and address; the manufacturing location; the production date code; the ICC-ES evaluation report number (ESR-1456); and the name of the inspection agency (FM Approvals).

8.0 OTHER CODES

8.1 Evaluation Scope:

In addition to the code referenced in Section 1.0, the products in this report were evaluated for compliance with the requirements of the 1999 *Standard Building Code*© (SBC).

8.2 Uses:

See Section 2.0.

8.3 Description:

See Section 3.0.

8.4 Installation:

8.4.1 General: Installation and application of FiberTite® Roofing Membranes must comply with the SBC, the manufacturer's published installation instructions, and this report. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

The slope of the roof on which the FiberTite® membranes are installed must be a minimum of $^1/_4$:12 (2 percent slope) and must not be more than the maximum slope indicated for the particular assembly as listed in Tables 1 through 5.

Penetrations and terminations of the roof covering must be flashed and made weather-tight in accordance with the requirements of the membrane manufacturer and the SBC.

8.4.2 Fire Classification:

8.4.2.1 New Construction: See Section 4.2.1.

8.4.2.2 Reroofing: Prior to installation of new roof coverings, inspection in accordance with Section 1510 of the SBC, and approval from the code official, are required.

See Section 4.2.2 for the balance of reroofing requirements.

8.4.3 Wind Resistance:

8.4.3.1 New Construction: The maximum allowable wind uplift pressures for the FiberTite® Roofing Membranes as part of roof covering systems are noted in Tables 6 and 7.

8.4.3.2 Reroofing: See Section 4.3.2.

8.5 Conditions of Use:

The FiberTite®, FiberTite®-XT, and FiberTite®-FB roofing membranes described in this report comply with, or are suitable alternatives to what is specified in, the SBC, subject to the following conditions:

8.5.1 Installation and application of FiberTite® Roofing Membranes must comply with the SBC, the manufacturer's published installation instructions, and this report. The instructions within this report govern if there are any conflicts between the manufacturer's instructions and this report.

8.5.2 See Section 5.2.

8.5.3 Foam plastic insulation must be separated from the interior of the building by an approved thermal barrier in accordance with SBC Section 2603.5.1.5, unless otherwise noted in an ICC-ES evaluation report on the foam plastic insulation for direct-to-steel-deck applications.

8.5.4 See Section 5.4.

8.5.5 See Section 5.5.

8.5.6 The allowable wind uplift pressures listed in Tables 6 and 7 are for the roof covering only. The deck and framing to which the covering is attached must be designed for the applicable components and cladding wind loads in accordance with the SBC.

8.5.7 See Section 5.7.

8.5.8 See Section 5.8.

8.6 Evidence Submitted:

See Section 6.0.

8.7 Identification:

See Section 7.0.

TABLE 1—BALLASTED ROOFING SYSTEMS

SYSTEM NO.	ROOF CLASS	SUBSTRATE[4]	MAX. ROOF SLOPE	INSULATION[1,2,3]	MEMBRANE[3]	SURFACING/ COATING
1	A	Noncombustible	2:12	One or more layers of the following or combinations of the following (any thickness, except restricted to 2-inch max. when polystyrene is used alone): polystyrene, polyisocyanurate, laid loosely	"FiberTite" or "FiberTite-XT," laid loosely	River bottom stone, ($^3/_4$ inch to $1^1/_2$ inches in diam.) at 1000 lbs/square or min. 10 psf concrete blocks

For **SI:** 1 inch = 25.4 mm; 1 lb = 4.448 N; 1 psf = 47.88 Pa; 1 square = 9.29 m².

[1]All foam plastic insulation must be UL-classified foam plastic for roofing systems, and must be limited to the maximum thickness in accordance with Section 5.4 of this report or the maximum thickness in accordance with this table, whichever is less.
[2]EPS insulation boards must comply with ASTM C 578. Polyisocyanurate insulation boards must comply with ASTM C 1289.
[3]Unless otherwise specified, the insulation and membranes must be UL-classified for roofing system applications.
[4]Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (f_c) of 2500 psi.

TABLE 2— MECHANICALLY FASTENED ROOFING SYSTEMS[3]

SYSTEM NO.	ROOF CLASS	SUBSTRATE[4]	MAX. ROOF SLOPE	BARRIER BOARD OR SLIP SHEET	INSULATION[1]	MEMBRANE
1	A	Noncombustible	2:12	---	Atlas Roofing "ACFoam II" or Johns-Manville "E'NRG'Y 2" and Seaman's FT*R*-VALUE polyisocyanurate (2 in. max.)	"FiberTite" or "FiberTite-XT"
2	A	Noncombustible	$^1/_4$:12	---	Atlas Roofing "ACFoam II" or Johns-Manville "E'NRG'Y 2" and Seaman's FT*R*-VALUE polyisocyanurate (any thickness)	"FiberTite" or "FiberTite-XT"
3	A	Noncombustible	1:12	(Optional) $^1/_4$-inch G-P Gypsum "DensDeck," or Atlas Roofing "FR-10"	Cellular, gypsum or structural concrete	"FiberTite" or "FiberTite-XT"
4	A	Combustible - $^{15}/_{32}$-inch plywood min.	Unlimited	$^1/_4$-inch G-P Gypsum "DensDeck," w/ all joints staggered a minimum of 6 inches from plywood joints	(Optional) Polyisocyanurate, polystyrene, any thickness or combination	"FiberTite" or "FiberTite-XT"
5	B	Combustible - min. $^{15}/_{32}$-inch plywood	1:12	$^5/_8$-inch gypsum board w/ 6-inch offset joints from plywood deck	---	"FiberTite" or "FiberTite-XT"
6	B	Combustible - 3-inch T&G lumber	1:12	$^5/_8$-inch gypsum board	---	"FiberTite" or "FiberTite-XT"

For **SI:** 1 inch = 25.4 mm.

[1]All foam plastic insulation must be UL-classified foam plastic for roofing systems, and must be limited to the maximum thickness in accordance with Section 5.4 or the maximum thickness in accordance with this table, whichever is less.
[2]EPS insulation boards must comply with ASTM C 578. Polyisocyanurate insulation boards must comply with ASTM C 1289.
[3]Unless otherwise specified, the barrier board, slip sheet, insulation and membranes must be UL-classified for roofing system applications.
[4]Wood deck must be minimum $^{15}/_{32}$-inch-thick (11.9 mm) plywood. Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (f_c) of 2500 psi.

TABLE 3—ADHERED ROOFING SYSTEMS[3]

SYSTEM NO.	ROOF CLASS	SUBSTRATE[4]	MAX. ROOF SLOPE	BARRIER BOARD OR SLIP SHEET	INSULATION[1,2]	MEMBRANE
1	A	Noncombustible	2:12	(Optional) Min. 1/4-inch-thick G-P 'DensDeck' mechanically fastened or adhered with "Insta-Stik" or hot asphalt	(Optional) Seaman "FTR-Value," Atlas Roofing "ACFoam II" or ACFoam III" or Johns Manville "E'NRG'Y-2," any thickness or combination, mechanically fastened or adhered in "Insta-Stik" or hot asphalt	"FiberTite," "FiberTite-XT," or "FiberTite-FB."
2	A	Concrete	2:12	---	---	"FiberTite-FB"
3	A	Concrete	2:12	(Optional) Min. 1/4-inch-thick G-P "DensDeck" mechanically fastened or adhered with "Insta-Stik" or hot asphalt. Vapor barrier: Celotex "Hydrostop," loosely laid or mechanically fastened	(Optional) Atlas Roofing "ACFoam II" or "ACFoam III" or Johns Manville "E'NRG'Y-2, and "Seaman "FTR-Value," any thickness or combination, mechanically fastened or adhered in "Insta-Stik" or hot asphalt	"FiberTite," "FiberTite-XT," or "FiberTite-FB."
4	A	Combustible - 15/32-inch plywood min.	2:12	Min. 5/8-inch gypsum board or min. 1/4-inch-thick G-P "DensDeck" mechanically fastened w/ joints offset 6 inches. Vapor barrier (optional): Polyethylene, kraft paper or Celotex "Hydrostop," loosely laid	(Optional) Seaman "FTR-Value," Atlas Roofing "ACFoam II" or ACFoam III" or Johns Manville "E'NRG'Y-2," any thickness or combination, mechanically fastened or adhered in "Insta-Stik" or hot asphalt	"FiberTite," "FiberTite-XT," or "FiberTite-FB."
5	A	Combustible- 15/32-inch plywood min.	Unlimited	(Optional) Min. 1/4-inch-thick G-P "DensDeck," mechanically fastened or adhered with "Insta-Stik" or hot asphalt	(Optional) Polyisocyanurate, any thickness, loosely laid or mechanically fastened	"FiberTite," "FiberTite-XT," or "FiberTite-FB."
6	A	Concrete	1/2:12	(Optional) Min. 1/4-inch-thick G-P "DensDeck," mechanically fastened or adhered with "Insta-Stik" or hot asphalt. Vapor barrier: Celotex "Hydrostop," loosely laid or mechanically fastened	Atlas Roofing "ACFoam II" or "ACFoam III" or Johns Manville "E'NRG'Y-2" and Seaman "FTR-Value," any thickness or combination, mechanically fastened or adhered in "Insta-Stik" or hot asphalt	"FiberTite-FB"

For **SI:** 1 inch = 25.4 mm; 1 ft² = 0.093 m²; 1 square = 9.29 m²; 1 gal = 3.785 L.

[1]All foam plastic insulation must be UL-classified foam plastic for roofing systems, and must be limited to the maximum thickness in accordance with Section 5.4 or the maximum thickness in accordance with this table, whichever is less.
[2]EPS insulation boards must comply with ASTM C 578. Polyisocyanurate insulation boards must comply with ASTM C 1289.
[3]Unless otherwise specified, the barrier board, slip sheet, insulation and membranes must be UL-classified for roofing system applications.
[4]Wood deck must be minimum 15/32-inch-thick (11.9 mm) plywood. Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (f_c) of 2500 psi.

TABLE 4—REROOFING SYSTEMS[3] (MECHANICALLY FASTENED)

SYSTEM NO.	ROOF CLASS	SUBSTRATE[4]	MAX. ROOF SLOPE	EXISTING UNINSULATED ROOF SYSTEM	BARRIER BOARD OR SLIP SHEET	INSULATION[1,2]	MEMBRANE
1	A	Combustible - $^{15}/_{32}$-inch plywood, min.	Unlimited	Class A, B, or C cap sheet, smooth-surfaced BUR roof or single-ply membrane (EPDM, PVC or CPE)	One-ply Atlas Roofing "FR-50" or two plies Atlas Roofing "FR-10"	---	"FiberTite" or "FiberTite-XT"
2	A	Noncombustible	$^{1}/_{2}$:12	Class A, B, or C cap sheet, smooth-surfaced BUR roof or single-ply membrane (EPDM, PVC or CPE)	---	a. Any UL-classified polystyrene insulation, (tapered or uniform thickness), any thickness, covered w/ Atlas Roofing "FR-10." b. Atlas Roofing "A1" or "ACFoam II" or Johns Manville "E'NRG'Y 2" and Seaman "FTR-Value" polyisocyanurate insulation, any thickness	"FiberTite" or "FiberTite-XT"
3	A	Combustible - $^{15}/_{32}$-inch plywood, min.	Unlimited	Class A, B, or C cap sheet, smooth-surfaced BUR roof or single-ply membrane (EPDM, PVC or CPE)	$^{1}/_{4}$-inch G-P DensDeck, mechanically fastened	---	"FiberTite" or "FiberTite-XT"
4	A	Combustible - $^{15}/_{32}$-inch plywood, min.	2:12	Class A gravel-surfaced BUR (gravel-maintained)	---	Atlas Roofing "ACFoam II" or Johns Manville "E'NRG'Y 2" and Seaman "FTR-Value" polyisocyanurate insulation, any thickness	"FiberTite" or "FiberTite-XT"

For **SI:** 1 inch = 25.4 mm.

[1]All foam plastic insulation must be UL-classified foamed plastic for roofing systems, and must be limited to the maximum thickness in accordance with Section 5.4 or the maximum thickness in accordance with this table, whichever is less.
[2]PS insulation boards must comply with ASTM C 578. Polyisocyanurate insulation boards must comply with ASTM C 1289.
[3]Unless otherwise specified, the barrier board, slip sheet, insulation and membranes must be UL-classified for roofing system applications.
[4]Wood deck must be minimum $^{15}/_{32}$-inch-thick (11.9 mm) plywood. Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (f_c) of 2500 psi.

TABLE 5—REROOFING SYSTEMS[3] (ADHERED)

SYSTEM NO.	ROOF CLASS[5]	SUBSTRATE[4]	MAX. ROOF SLOPE	EXISTING ROOF SYSTEM	BARRIER BOARD OR SLIP SHEET	INSULATION[1,2]	MEMBRANE
1	A, B or C	Noncombustible	2:12	Class A, B, or C to retain the existing classification, insulated or uninsulated cap sheet, smooth surface BUR or single-ply membrane	(Optional) Min. $^{1}/_{4}$-inch-thick G-P "DensDeck" mechanically fastened or adhered in "Insta-Stik" or hot asphalt	Seaman "FTR-Value," Atlas Roofing "ACFoam II" or "ACFoam III" or Johns Manville "E'NRG'Y-2," any thickness or combination, mechanically fastened or adhered in "Insta-Stik" or hot asphalt	"FiberTite," "FiberTite-XT," or "FiberTite-FB"
2	A, B or C	Combustible- $^{15}/_{32}$-inch plywood, min.	2:12	Class A, B, or C to retain the existing classification, insulated or uninsulated cap sheet	(Optional) Min. $^{1}/_{4}$-inch-thick G-P "DensDeck" mechanically fastened or adhered in "Insta-Stik" or hot asphalt	Seaman "FTR-Value," Atlas Roofing "ACFoam II" or "ACFoam III" or Johns Manville "E'NRG'Y-2," any thickness or combination, mechanically fastened or adhered in "Insta-Stik" or hot asphalt	"FiberTite," "FiberTite-XT," or "FiberTite-FB"

For **SI:** 1 inch = 25.4 mm; 1 gal = 3.785 L; 1 square = 9.29 m².

[1]All foam plastic insulation must be UL-classified foam plastic for roofing systems, and must be limited to the maximum thickness in accordance with Section 5.4 or the maximum thickness in accordance with this table, whichever is less.
[2]EPS insulation boards must comply with ASTM C 578. Polyisocyanurate insulation boards must comply with ASTM C 1289.
[3]Unless otherwise specified, the barrier board, slip sheet, insulation and membranes must be UL-Classified for roofing system applications.
[4]Wood deck must be minimum $^{15}/_{32}$-inch-thick (11.9 mm) plywood. Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (f_c) of 2500 psi.
[5]Classification remains the same as that of the existing roof covering system.

TABLE 6—WIND RESISTANCE ASSEMBLIES (MECHANICALLY ATTACHED)

SYSTEM NO.	ALLOWABLE WIND UPLIFT (psf)	DECK[2]	INSULATION[1]	MEMBRANE	MEMBRANE/INSULATION FASTENING[1]	FASTENER SPACING (inches)	FASTENER ROW SPACING (inches)
1	30	Concrete or steel deck	Foam plastic insulation board	"FiberTite" or "FiberTite-XT," paneled and nonpaneled roll membrane	(Open Lap) Paneled rolls are fastened at securing tabs, 4.25 ft (1.3 m) on center. Nonpaneled rolls are secured at 5-inch (0.12 m) overlap and the outside edge is heat-welded (min. 1.5-inch [38 mm] weld). Membranes are applied over insulation and secured at tabs or laps w/ FiberTite Magnum Fasteners and Magnum Stress Plates.	24	51
2	45	Concrete or steel deck	Foam plastic insulation board	"FiberTite" or "FiberTite-XT," paneled and nonpaneled roll membrane	(Open Lap) Same as System #1 above.	18	51
3	60	Concrete or steel deck	Foam plastic insulation board	"FiberTite" or "FiberTite-XT," paneled and nonpaneled roll membrane	(Open Lap) Same as System #1 above.	12	51
4	75	Concrete or steel deck	Foam plastic insulation board	"FiberTite" or "FiberTite-XT," paneled and nonpaneled roll membrane	(Open Lap) Paneled rolls are fastened at securing tabs, 1.92 ft (0.6 m) on center. Nonpaneled rolls are secured at 5-inch (0.12 m) overlap and the outside edge is heat-welded (min. 1.5-inch [38 mm] weld). Membranes are applied over insulation and secured at tabs or laps w/ FiberTite Magnum Fasteners and Magnum Stress Plates.	12	51
5	37	Concrete or steel deck	Foam plastic insulation board	"FiberTite" or "FiberTite-XT," double-width panel roll membrane (Top-Sider System)	(Closed Lap) Membranes are applied over insulation with top surface tabs (Top-Sider), and are secured to the deck with FiberTite Magnum Fasteners and Magnum Stress Plates, under the roof cover's 4.5- inch (114 mm) top surface tabs. The tabs are then heat-welded (min. 1.5-inch [38 mm] weld).	12	104
6	75	Concrete or steel deck	Foam plastic insulation board	"FiberTite" or "FiberTite-XT," double-width panel roll membrane (Top-Sider System)	(Closed Lap) Same as System #5 above.	6	104
7	30	Concrete or steel deck	Foam plastic insulation board	"FiberTite" or "FiberTite-XT," Double-Width Panel Roll Membrane (Modified Top-Sider System)	(Closed Lap) Membranes are applied over insulation, with top surface tabs (Top-Sider) ,and are secured to the deck with FiberTite Magnum Fasteners and Magnum Stress Plates, through the top of the membrane. The strip is heat-welded (min. 1.5-inch [38 mm] weld) down both sides of the strip.	12	120
8	37	Concrete or steel deck	Foam plastic insulation board	"FiberTite" or "FiberTite-XT," Paneled Roll Membrane	(Open Lap) Paneled rolls are fastened at securing tabs, 105.5 inches (2.68 m) on center. Membranes are applied over insulation, with top surface tabs (Top-Sider) and secured to the deck with FiberTite Magnum Fasteners and Magnum Stress Plates, under the roof covers 4.5-inch (114 mm) top surface tabs. The tabs are then heat-welded (min. 1.5 inches [38 mm] weld).	12	106

For **SI:** 1 inch = 25.4 mm; 1 psf = 47.88 Pa.

[1]Insulation and fasteners must be FM-approved. Foam plastic insulation must be UL-classified foam plastic for roofing systems, and must be limited to the maximum thickness in accordance with Section 5.4 of this report or the maximum thickness in accordance with this table, whichever is less.

[2]Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (f_c) of 2500 psi. See Section 5.6.

TABLE 7— WIND RESISTANCE ASSEMBLIES (ADHERED)

SYSTEM NO.	ALLOWABLE WIND UPLIFT (psf)	DECK[2]	INSULATION[1]	MEMBRANE	INSULATION ATTACHMENT[1]	ADHERING MEMBRANE DIRECTIONS
1	45	Concrete or steel deck	Foam plastic insulation board	"FiberTite," "FiberTite-XT," or "FiberTite-FB," paneled membrane (without tabs) or nonpaneled rolls	Membranes are applied over the insulation board, mechanically attached to the deck with FiberTite Insulation Fasteners (steel or plastic plate) applied at a density of one fastener per 2 sq ft (0.2 sq m) for min. 1.5-inch (38 mm) insulation thickness or one fastener per 4 sq ft for min. 2.0-inch (51 mm) insulation thickness.	(1) " FiberTite" or "FiberTite-XT" is adhered to the insulation w/ Seaman FTR-190 Bonding Adhesive roller-applied to both the underside of the roof cover and the insulation at 1 gal per square (0.4 L/m^2), and allowed to set for 5 to 10 minutes before joining. The membrane edges are lapped a min. of 4 inches (204 mm) and sealed w/ a min. 1.5-inch-wide (38 mm) heat weld. (2) "FiberTite-FB" is adhered to the insulation w/ Seaman FTR-390 at an application rate of 1 gal per 60 sq ft (0.67 L/m^2 or Seaman FTR-290 solvent adhesive at an application rate of 1 gal per square (0.4 L/m^2) or asphalt applied at a rate of 20-25 lbs/square (1.0-1.2 kg/m^2). The membrane edges are lapped a min. of 4 inches (204 mm) and sealed w/ a min. of 1.5- inch-wide (38 mm) heat weld.
2	45	Structural concrete	Foam plastic insulation board	"FiberTite," "FiberTite-XT," or "FiberTite-FB," paneled membrane (without tabs) or nonpaneled rolls	Membranes are applied over min. 1.5-inch (38 mm) insulation board, adhered to the primed or unprimed structural concrete deck with Insta-Stik Roofing Adhesive or hot asphalt.	(1) " FiberTite" or "FiberTite-XT" is adhered to the insulation w/ Seaman FTR-190 Bonding Adhesive roller-applied to both the underside of the roof cover and the insulation at 1 gal per square (0.4 L/m^2), and allowed to set for 5 to 10 minutes before joining. The membrane edges are lapped a min. of 4 inches (204 mm) and sealed w/ a min. 1.5-inch-wide (38 mm) heat weld. (2) "FiberTite-FB" is adhered to the insulation w/ Seaman FTR-390 at an application rate of 1 gal per 60 sq ft (0.67 L/m^2 or Seaman FTR-290 solvent adhesive at an application rate of 1 gal per square (0.4 L/m^2) or asphalt applied at a rate of 20-25 lbs/square (1.0-1.2 kg/m^2). The membrane edges are lapped a min. of 4 inches (204 mm) and sealed w/ a min. of 1.5-inch-wide (38 mm) heat weld.
3	45	FMRC-Approved "Cellular" lightweight concrete w/ a min. 36 lb/ft^3 (577kg/m^3) wet cast density, a min. 2 in (51 mm) thick top pour and sealed w/ approved curing compound	---	"FiberTite-FB," nonpaneled rolls	---	"FiberTite-FB" is adhered to the sealed cellular lightweight concrete with Seaman FTR-390 at an application rate of 1 gal per 60 sq ft (0.67 L/m^2 or Seaman FTR-290 solvent adhesive at an application rate of 1 gal per square (0.4 L/m^2). The membrane edges are lapped a min. of 4 inches (204 mm) and sealed w/ a min. of 1.5-inch-wide (38 mm) heat weld.

For **SI:** 1 inch = 25.4 mm; 1 lb = 4.448 N; 1 psf = 47.88 Pa; 1 gal = 3.785 L; 1 square = 9.29 m².

[1]Insulation and fasteners must be FM-approved. Foam plastic insulation must be UL-classified foamed plastic for roofing systems, and must be limited to the maximum thickness in accordance with Section 5.4 of this report or the maximum thickness in accordance with this table, whichever is less.

[2]Steel deck must be minimum No. 22 gage galvanized steel [0.030 inch (0.76 mm)]. Concrete must have a minimum compressive strength (f_c) of 2500 psi. See Section 5.6.